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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/281,365	03/30/1999	DARREN D. NEUMAN	5201-19401	7152

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LSI LOGIC CORPORATION
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MILPITAS, CA 95035

EXAMINER

LEE, PING

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 06/24/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/281,365

Applicant(s)

NEUMAN, DARREN D.

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "said display controller" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plunkett (US 5,386,478) in view of Dunlavy (US 5,778,087).

Regarding claims 1-4, 6, Plunkett discloses an audio calibration system comprising a control logic (although not clearly shown, a remote control is connected to a control logic to provide proper controls), an input device (10), a noise generator (col. 4, lines 5-6), a plurality of speakers (14s) and delay modules (24s). Plunkett fails to

Art Unit: 2644

show a noise generator for generating pseudo-random noise signal, a display coupled to the control logic and five speakers.

In the same field of endeavor, Dunlavy teaches an audio calibration system using pseudo-random generator for generating the test signal. Plunkett teaches the use of a general pulse without specifying the detail. The specification also fails to specify the reason for using pseudo-random noise generator. Thus, it would have been obvious to one of ordinary skill in the art to modify Plunkett's system by using a pseudo-random generator as taught in Dunlavy in order to generate a test signal.

Regarding the missing display and five speakers in Plunkett, Plunkett teaches a high priced sophisticated stereo system with a remote control (col. 2, lines 46-63). It was well known to those skilled in the art that a well known surround sound home theater system usually comprising a display and a sophisticated stereo system having five speakers controlled by an universal remote control. Although Plunkett explicitly teaches of calibrating two speakers, the well known surround sound home theater system also would benefit from using the audio calibration system as taught Plunkett to compensate the unequal delay posed by different speakers. Thus, it would have been obvious to one of ordinary skill in the art to utilize Plunkett's system in view of Dunlavy to calibrate a well known surround sound home theater system in order to calibrate the delay between various speakers in the surround sound system.

Regarding claim 7, Plunkett fails to show an inverter. Plunkett teaches an automatic calibrator without disclosing the detail of how to determine the inequality in delay. Dunlavy teaches one way of determining the inequality is by inverting the signal

Art Unit: 2644

applied to left speaker relative to the signal applied to the right speaker. By doing so, at the perfect balance spot, the result measured by the microphone is a null. Thus, it would have been obvious to one of ordinary skill in the art to modify Plunkett's system in view of Dunlavy by using an inverter for inverting the signal applied to one speaker relative to another speaker in order to accurately determine the perfect balance spot using the microphone to measure the null.

Regarding claim 8, Plunkett fails to show the low pass filter. Dunlavy teaches only a portion of the noise signal within the audible sound spectrum is needed for calibration. Thus, it would have been obvious to one of ordinary skill in the art to modify Plunkett's system in view of Dunlavy by using a low pass filter in order to obtain a portion of the noise signal within the audible sound spectrum.

Regarding claim 9, the limitation of this claim has been discussed above with respect to claims 1-4, 7 and 9.

Regarding claims 15, 18 and 19, the limitation of this claim has been discussed above with respect to claims 1-4 and 7.

Regarding claims 16 and 17, Plunkett fails to show how to adjust the location of a null line for a second and third speakers. Plunkett in view of Dunlavy teaches how to adjust the null line between a reference speaker and a first speaker. Since the ultimate goal of calibrating the speakers is to determine the sweet spot, one skilled in the art would have expected that the same procedure could be applied to a second and then a third speakers without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify Plunkett's system in view of Dunlavy

Art Unit: 2644

by calibrating more than two speakers using the same procedure in order to provide calibration for a surround sound system.

Regarding claim 20, the limitation of this claim has been discussed above with respect to claim 8.

Regarding claims 22 and 23, Plunkett's system in view of Dunlavy fails to show a computer readable storage medium for storing a set of software instructions for controlling the calibration. Plunkett teaches an automatic calibration system with setup routine having procedures. Although Plunkett fails to explicitly mention a set of software instructions, one skilled in the art would be able to derive a set of software instructions in view of Plunkett and Dunlavy without undue experience. By using a computer for performing the calibration using a set of software instruction, one skilled in the art would have expected that the calibration would be performed in a more accurate form. Thus, it would have been obvious to one of ordinary skill in the art to further modify Plunkett's system in view of Dunlavy by using a computer and a set of software instructions performing the equivalent function as taught in Plunkett and Dunlavy in order to accurately calibrate the speaker system.

Regarding claims 5, 10-13, 21 and 24, Plunkett fails to show a display which displays the relative location of a null line. Dunlavy teaches using an indicator (46) to indicate the relative location of a null line. Thus, it would have been obvious to one of ordinary skill in the art to modify Plunkett by using the display as taught in Dunlavy in order to indicate to the user the relative location of the null line.

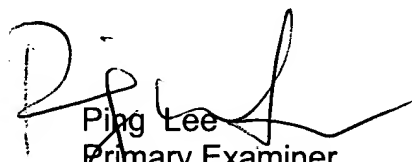
Art Unit: 2644

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865.

The examiner can normally be reached on Monday and Tuesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.


Ping Lee
Primary Examiner
Art Unit 2644

pwl
June 20, 2003